What is claimed is:

1. An apparatus useful for disposal of hydrogen in a fluid comprising hydrogen and residual amounts of HF and aerosol electrolyte from a fluorine generator, the apparatus comprising:

a) an electrolyte aerosol removal unit comprising an aerosol removal composition therein through which the fluid is adapted to flow;

b) a catalytic unit comprising a catalytically activated combustion surface, the catalytic unit adapted to be positioned inside of a forced convection duct, the catalytic unit fluidly connected to the aerosol removal unit by a conduit, the catalytically activated combustion surface adapted to combust the hydrogen in an oxygen-containing stream, typically air or exhaust gases comprising air flowing through the forced convection duct.

2. The apparatus of claim 1 wherein the apparatus is modular.

3. The apparatus of claim 1 wherein the apparatus is portable.

4. The apparatus of claim 1 wherein the aerosol removal component is in bed form.

5. The apparatus of claim 1 wherein the aerosol removal composition comprises a composition selected from the group consisting of soda lime, sodium fluoride, heated activated aluminum oxide, finely divided nickel, or combination thereof.

6. The apparatus of claim 1 wherein the conduit that fluidly connects the aerosol removal unit and the catalytic unit is selected from the group consisting of a nickel tube and a nickel-lined tube.

7. The apparatus of claim 1 wherein the aerosol removal unit is maintained at a temperature ranging from about 25°C to about 200°C.

8. The apparatus of claim 1 wherein the catalytic unit is maintained at a temperature of at least 70°C.

9. The apparatus of claim 1 wherein the catalytic unit is maintain at a temperature of at least 200°C.

10. The apparatus of claim 1 wherein the catalytically activated combustion surface is maintain at a temperature of at least 70°C.

11. The apparatus of claim 10 wherein the catalytically activated combustion surface is maintain at a temperature of at least 200°C.

12. The apparatus of claim 1 wherein the aerosol removal unit and catalytic unit are position at a distance from a fluorine generator.

13. The apparatus of claim 1 wherein the aerosol removal unit and the catalytic unit are mounted on top of and within the footprint of a fluorine generator.

14. The apparatus of claim 1 wherein the catalytically activated combustion surface comprises one or more layers of wire screen, wherein individual wires of the wire screen may be the same or different in composition, diameter, and orientation.

15. The apparatus of claim 14 wherein the catalytically activated combustion surface is a 10-ply layer of 95 percent platinum, 5 percent rhenium alloy screen.

16. A method for disposal of hydrogen in a fluid comprising hydrogen and residual amounts of HF and aerosol electrolyte from a fluorine generator, the method comprising the steps of:

a) flowing the fluid through an electrolyte aerosol removal component comprising an aerosol removal composition, wherein the fluid contacts the aerosol removal composition thereby forming a hydrogen-rich fluid reduced in aerosol; and

b) contacting the hydrogen-rich fluid reduced in aerosol with a catalytically activated combustion surface positioned inside of a forced convection duct, while a gas comprising oxygen flows through the forced convection duct, thereby combusting the hydrogen with oxygen in the oxygen-containing stream.

17. An apparatus useful for generating fluorine, the apparatus comprising:

a) a fluorine generator adapted to produce a hydrogen-rich fluid; and

b) the apparatus of claim 1, wherein the aerosol removal unit is fluidly connected to the fluorine generator and adapted to accept the hydrogen-rich fluid.

18. A method for generating fluorine and disposal of by-product hydrogen in a fluid comprising hydrogen, residual amounts of HF and aerosol electrolyte from a fluorine generator, the method comprising the steps of:

a) generating a fluorine-rich stream and a hydrogen–rich stream, the hydrogen-rich stream comprising minor amounts of electrolyte and hydrogen fluoride;

b) routing the fluorine-rich stream to a cleanup train to produce a purified fluorine stream; and

c) routing the hydrogen-rich stream to the apparatus of claim 1, thereby substantially reducing the aerosol content and combusting the hydrogen.